

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0093

MONITORING AND REPORTING PROGRAM
YUBA SUTTER DISPOSAL, INCORPORATED
YUBA SUTTER DISPOSAL, INCORPORATED LANDFILL
CLASS III LANDFILLS
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
YUBA COUNTY

Yuba Sutter Disposal, Incorporated (Discharger) shall maintain water quality monitoring systems that are appropriate for detection monitoring and corrective action and that comply with the provisions of Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Chapter 3, Subchapter 3.

Monitoring data indicated a release from LF-3, specifically from groundwater monitoring well MW-8. The Discharger submitted an *Amendment to the Report of Waste Discharge and Establishment of Evaluation Monitoring Program* on 5 April 2002 in response to the detection of one volatile organic compound (VOC), 1,1-dichloroethane, above the practical quantitation limit and total and bicarbonate alkalinity above the concentration limit. The presence of 1,1-dichloroethane and elevated levels of total and bicarbonate alkalinity were confirmed in later re-tests. As part of evaluation monitoring, three new groundwater monitoring wells (MW-11, MW-12, and MW-13) were installed and sampled for inorganic parameters and VOCs during the investigation. One piezometer (PZ-14) was also installed to aid in more accurately defining the groundwater flow gradient. The 2 September 2002 *Engineering Feasibility Study* concluded that the low-level VOC impacts to groundwater were limited to the area of well MW-8 and that the most likely source of impact was determined to be landfill gas (LFG) migrating from LF-3. The primary corrective action recommended in the report targeted source control of LFG in LF-3 by constructing a passive, shallow horizontal interceptor trench, below the cover system and above the base liner system, along the northeast perimeter of LF-3. These changes are included in this revised Monitoring and Reporting Program.

Compliance with this Monitoring and Reporting Program, with Title 27 CCR, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D* (27 CCR §20005 et seq. and 40 CFR 258), dated August 1997, is ordered by Waste Discharge Requirements Order No. R5-2003-0093. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes non-compliance with the WDRs and with the California Water Code, which can result in the imposition of civil monetary liability.

A. REQUIRED MONITORING PROGRAMS

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|------------------------------------------------------------------------------|----------------------|
| 1. Groundwater Monitoring (Section D.1) | See Table I |
| 2. Leachate Monitoring (Section D.2) | See Table II |
| 4. Surface Water Monitoring (Section D.3) | See Table III |
| 5. Standard Observations (Section D.4) | Weekly |
| 6. Facility Monitoring (Section D.5) | As necessary |
| 7. Response to a Release
(Standard Provisions and Reporting Requirements) | As necessary |

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2003-0093 and the Standard Provisions and Reporting Requirements, August 1997. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements.

In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, the units, method detection limits, practical quantitation limits and concentration limits are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a **Compliance Evaluation Summary** as specified in the Standard Provisions and Reporting Requirements, August 1997. As part of the summary, the Discharger shall report the effectiveness of the corrective action program in accordance with Title 27 CCR Section 20430(h).

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Last Day of Month	by Semiannual Schedule
Quarterly	31 March	by Semiannual Schedule
	30 June	by Semiannual Schedule
	30 September	by Semiannual Schedule
	31 December	by Semiannual Schedule
Semiannually	30 June	31 July
	31 December	31 January
Annually	31 December	31 January

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in the Standard Provisions and Reporting Requirements, August 1997, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted more frequently than required at the locations specified herein or by the waste discharge requirements shall be reported to the Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

The Discharger submitted a water quality protection standard in the *"Article 5 Monitoring Program"* dated 1 July 1992. The program was revised in the *"Amendment to Report of Waste Discharge"* dated 31 August 1993; the *"Engineering Feasibility Study for the LF-3 North Area"* dated 19 September 2002; and subsequent *"Revised Engineering Feasibility Study for LF-3 North Area"* dated 10 January 2003. Any changes to this water quality protection standard shall be described in the annual monitoring report.

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables I through III for the specified monitored medium, and Table V.

The Discharger shall submit reports of the results of groundwater monitoring for the Constituents of Concern (COC) every 5 years, or more frequently if required. The groundwater monitoring for the COC Report shall alternate between the Fall and Spring seasons. The first COC event was conducted during the first quarter of 1996. The results of COC monitoring shall be submitted with, or reported in, the Annual Report for that year.

3. Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through III for the specified monitored medium.

4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27 CCR Section 20415; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with Title 27 CCR Section 20415.

Currently, concentration limits are calculated using interwell tolerance limits at 95% confidence and 95% coverage using pooled historical analytical data collected from background monitoring. Groundwater concentration limits are updated semi-annually. Surface water concentration limits are updated annually.

5. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically down-gradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

6. Compliance Period

The Compliance Period is the number of years equal to the closure period as long as the Regional Board determines that remaining wastes in the landfill will not threaten water quality. Each time the Standard is exceeded (i.e., a release is discovered), the landfill begins a Compliance Period on the date the Regional Board directs the Discharger to begin an Evaluation Monitoring Program (EMP). If the Discharger's Corrective Action Program (CAP) has not achieved compliance

with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the landfill has been in continuous compliance for at least three consecutive years.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 CCR for groundwater, surface water, and leachate, in accordance with the Detection Monitoring Specifications of Waste Discharge Requirements Order No. R5-2003-0093. All monitoring shall be conducted in accordance with the Sample Collection and Analysis Plan, which includes quality assurance/quality control standards.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through III.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table V. The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new United States Environmental Protection Agency (USEPA) approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a Detection Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The monitoring well network (Attachment B) currently consists of background monitoring wells MW-5, MW-6 and MW-7, detection monitoring wells MW-9, MW-11, MW-12 and MW-13, piezometer PZ-14, and corrective action wells MW-1, MW-2, MW-3, MW-4, MW-8 and MW-10. Currently, PZ-14 is only monitored for elevation to aid in more accurately defining the groundwater flow gradient. PZ-14, however, can be converted to a detection monitoring well, if necessary. If any of the detection monitoring wells are confirmed to be impacted, the wells shall be placed in the corrective action program.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Concentration limits are not required for calcium, magnesium, potassium, and sodium. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years.

2. Leachate Monitoring

All Unit leachate collection and removal system (LCRS) sumps shall be inspected weekly for leachate generation. Leachate monitoring points currently consist of four sump locations, S-2, S-3, S-4 and S-5. Upon detection of leachate in a previously dry leachate collection and removal system, leachate shall be sampled **immediately** and analyzed for the constituents listed in Table II. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. The constituents of concern list shall include all constituents listed in Table V. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

Leachate which seeps to the surface from the Unit shall be sampled and analyzed for the constituents listed in Table II upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

3. Surface Water Monitoring

The Discharger shall operate and maintain a surface water detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections

20415 and 20420 and has been approved by the Executive Officer.

For all monitoring points and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table III. Surface water is currently sampled upstream of the landfill at background monitoring point SW-5, and downstream, at SW-2, SW-3, and SW-4.

All surface water monitoring samples shall be collected and analyzed for the constituents of concern specified in Table V every five years. All monitoring parameters shall be graphed so as to show historical trends at each sample location.

4. Standard Observations

Each monitoring report shall include a summary and certification of completion of all Standard Observations for the waste management unit, for the perimeter of the landfill, and for the receiving waters. The standard observations shall be performed on a weekly basis and shall include those elements as defined in the Standard Provisions and Reporting Requirements, August 1997.

5. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **15 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system and groundwater monitoring equipment (including wells, etc.). By **1 October of each year**, the Discharger shall submit to the Regional Board the Inspection Report describing measures planned to prepare the site for the wet season.

Any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes by **15 November**.

b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*.

Necessary repairs shall be completed **within 30 days** of the inspection.

The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

6 June 2003

(Date)

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM
AND CORRECTIVE ACTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Semi-Annual
Temperature	°C	Semi-Annual
Electrical Conductivity*	µmhos/cm	Semi-Annual
pH*	pH units	Semi-Annual
Turbidity	Turbidity units	Semi-Annual
Monitoring Parameters		
Total Dissolved Solids (TDS)*	mg/L	Semi-Annual
Chloride*	mg/L	Semi-Annual
Carbonate	mg/L	Semi-Annual
Bicarbonate Alkalinity*	mg/L	Semi-Annual
Nitrate – Nitrogen*	mg/L	Semi-Annual
Sulfate*	mg/L	Semi-Annual
Calcium	mg/L	Semi-Annual
Magnesium	mg/L	Semi-Annual
Potassium	mg/L	Semi-Annual
Sodium	mg/L	Semi-Annual
Volatile Organic Compounds*, ** (USEPA Method 8260, see Table IV)	µg/L	Quarterly/Semi-Annual
Constituents of Concern (see Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

* For new wells: To be monitored quarterly for one year to determine a concentration limit.

** To be monitored quarterly for wells in corrective action and semi-annually for wells in detection monitoring.

Concentration limits shall be updated as additional data is obtained. Concentration limits are not required for calcium, magnesium, potassium, and sodium.

TABLE II
LEACHATE DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Total Volume	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm	Monthly
pH	pH units	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semi-Annual
Chloride	mg/L	Semi-Annual
Carbonate	mg/L	Semi-Annual
Bicarbonate	mg/L	Semi-Annual
Nitrate - Nitrogen	mg/L	Semi-Annual
Sulfate	mg/L	Semi-Annual
Calcium	mg/L	Semi-Annual
Magnesium	mg/L	Semi-Annual
Potassium	mg/L	Semi-Annual
Sodium	mg/L	Semi-Annual
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semi-Annual
Constituents of Concern (see Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

TABLE III
SURFACE WATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Temperature	°C	Semi-Annual
Electrical Conductivity	µmhos/cm	Semi-Annual
pH	pH units	Semi-Annual
Turbidity	Turbidity units	Semi-Annual
Monitoring Parameters		
Total Suspended Solids (TSS)*	mg/L	Semi-Annual
Total Dissolved Solids (TDS)*	mg/L	Semi-Annual
Total Organic Carbon*	mg/L	Semi-Annual
Carbonate*	mg/L	Semi-Annual
Bicarbonate*	mg/L	Semi-Annual
Chloride*	mg/L	Semi-Annual
Nitrate – Nitrogen*	mg/L	Semi-Annual
Sulfate*	mg/L	Semi-Annual
Calcium	mg/L	Semi-Annual
Magnesium	mg/L	Semi-Annual
Potassium	mg/L	Semi-Annual
Sodium	mg/L	Semi-Annual
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semi-Annual
Constituents of Concern (see Table V)		
Chemical Oxygen Demand*	mg/L	5 years
Dissolved Oxygen*	mg/L	5 years
Inorganics (dissolved)*	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

* For new monitoring points: To be monitored quarterly for one year to determine a concentration limit.

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC:

USEPA Method 8260B

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Methyl bromide (Bromomethane)

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING
Continued

Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
4-Methyl-2-pentanone (Methyl isobutylketone)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	200.7
Antimony	200.7
Barium	200.7
Beryllium	200.7
Cadmium	200.7
Chromium	200.7
Cobalt	200.7
Copper	200.7
Silver	200.7
Tin	200.7
Vanadium	200.7
Zinc	200.7
Iron	200.7
Manganese	200.7
Arsenic	200.9/200.8
Lead	200.9/200.8
Mercury	7470A
Nickel	200.9/200.8
Selenium	200.9/200.8
Thallium	200.9/200.8
Cyanide	9010
Sulfide	9030

Volatile Organic Compounds:

USEPA Method 8260B

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

p-Dichlorobenzene (1,4-Dichlorobenzene)
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
1,4-Naphthoquinone

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

USEPA Method 8150

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS
Continued

Organophosphorus Compounds:

USEPA Method 8141

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0093

WASTE DISCHARGE REQUIREMENTS
YUBA SUTTER DISPOSAL, INCORPORATED
YUBA SUTTER DISPOSAL, INCORPORATED LANDFILL
CLASS III LANDFILLS
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
YUBA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board), finds that:

1. Yuba Sutter Disposal, Incorporated (YSDI) (hereafter Discharger) owns and operates Yuba Sutter Disposal, Incorporated Landfill. YSDI is a subsidiary of Norcal Waste Systems, Incorporated. The 160-acre facility consists of Assessor Parcels Nos. 18-120-021, 18-130-001, 18-120-015, and 18-130-016. The disposal site is on Highway 20, about two miles northeast of the intersection of Highways 20 and 70, within the northeast city limits of Marysville in Sections 4, 5, and 8, T15N, R4E, MDB&M, as shown in Attachment A. Attachments A and B are incorporated herein and made part of this Order.
2. On 5 May 1997, the Discharger submitted a *Report of Waste Discharge* which described the closure of the facility and requested approval of an engineered alternative to the prescriptive requirements of landfill cover. Waste Discharge Requirements (WDRs) Order No. 97-250 was adopted on 5 December 1997 to reflect these changes.
3. On 9 January 2003, the Discharger submitted a *Revised Engineering Feasibility Study* describing significant changes to the groundwater monitoring program and implementation of corrective action measures to control a release of landfill gas (LFG) from the North Area (LF-3). These WDRs contain changes in the monitoring program for detection and corrective action.
4. The YSDI Landfill ceased the acceptance of waste in November 1996. Prior to closure, the average waste disposal rate at the facility was 500 tons/day. The site was permitted to receive a maximum of 160 tons/day of sewage sludge. Refuse was compacted in two-foot thick layers, and refuse slopes did not exceed 3:1 (horizontal:vertical). Waste was covered with at least six inches of daily cover.

5. The facility includes three existing landfills for waste disposal plus equipment storage and support areas (see Attachment B). The landfills, into which municipal solid wastes and agricultural wastes were placed by area fill method, are described as follows:
- a. **LF-1 (South Area)** - This landfill covers about 42 acres in the south and west central area of the facility. Wastes were placed in this unlined area from 1967 through 1984 after which it was closed in accordance with regulations that existed at the time. Most of this area has since been covered by building structures and paved parking, and is graded to drain toward an on-site storm water collection and removal system. There is no leachate collection and removal system (LCRS).
 - b. **LF-2 (Peach Orchard)** - This landfill covers about 25 acres in the central area of the facility. This unit was constructed with a clay liner and a small portion of the total area has a gravel blanket LCRS that drains towards an interior sump. Wastes were accepted in this area from 1984 through 1988. A final cover system, consisting of a two feet of foundation soil, a one foot thick low-permeable soil layer with permeability of 1×10^{-6} cm/sec or less, and a one foot thick vegetative layer was constructed in 1995.
 - c. **LF-3 (North Area)** - This landfill covers about 38 acres in the north and east central area of the facility. This area accepted waste between 1988 and 1996. Phases I and II were constructed in 1989 and are lined with a single 60-mil high density polyethylene (HDPE) geomembrane on a prepared subgrade. Phase III was constructed with a composite liner system consisting of a one foot thick low-permeability soil layer with 1×10^{-6} cm/sec permeability or less overlain by a 60-mil HDPE flexible membrane liner and LCRS, followed by a one foot operations layer. Phase IV was constructed with a composite liner system consisting of a two foot thick low-permeability soil layer with a permeability of 1×10^{-7} cm/sec or less overlain by a 60-mil HDPE flexible membrane liner and LCRS, followed by a one foot operations layer. Leachate is extracted via submersible pumps and transported by tanker truck to the City of Marysville Wastewater Treatment Plant for disposal.

An engineered alternative for closure of the top deck, as described in the *Final Report* dated 24 November 1997 for LF-3's closure cap, consists of the following (from bottom to top): compacted soil subgrade; arterial gas collection piping system with 1-½ inch drain gravel; 6-inch gas collection sand layer; geosynthetic clay liner (GCL) with 40-mil HDPE textured geomembrane backing; 7 oz/sy geotextile cushion fabric; and 1 foot vegetative soil cover. The side slope sections consists of the following: compacted soil subgrade; 6-inch gas collection sand layer; 40-mil textured HDPE geomembrane; 7 oz/sy geotextile cushion fabric along the toe of the slope; 1 ½ inch drain gravel placed at the toe of the slope; geocomposite drain net; and 1 foot thick vegetative soil cover. The Regional Board approved this engineered alternative in WDRs Order No. 97-250.

6. In addition to the landfill, the Discharger operates a transfer station and a material recovery facility at the site which are not covered by this permit.

SITE DESCRIPTION

7. Land within 1,000 feet of the site is primarily agricultural and residential. There is a separately owned and operated landfill adjacent to the south/southwest edge of the facility.
8. The site is underlain by the Victor Formation consisting of about 500 feet of consolidated and unconsolidated sand, clay, silt and gravel. These sediments generally have moderate permeabilities with locally high permeabilities in the sand and gravel lenses.
9. The 100-year, 24-hour precipitation event for the site is 12.49 inches (State of California, Department of Water Resources, October 1976).
10. The site receives an average of 21.1 inches of precipitation per year (National Climatic Data Center, Marysville Station, 1900 - 1995). The mean evaporation for this facility is 55.63 inches per year (State of California, Department of Water Resources, recorded at the Marysville Station, 1949 - 1953).
11. Analysis by the Discharger estimated the maximum probable earthquake to be 5.7, which would produce a maximum average peak horizontal ground acceleration of 0.20 g.

WASTES AND THEIR CLASSIFICATION

12. The Discharger discharged wastes classified under Title 27 CCR as “non-hazardous solid waste” and “inert waste”. These wastes included, but were not limited to, mixed municipal waste, construction/demolition wastes (including asbestos, if non-friable or less than 1 percent friable by volume), industrial wastes, agricultural wastes (including dewatered prune pulp), sewage sludge (in accordance with Title 27 CCR Section 20220), tires, non-biohazardous hospital wastes, and non-hazardous, non-designated soils.

SURFACE AND GROUNDWATER CONDITIONS

13. The *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
14. Surface drainage is to the southwest into the Yuba River, which is tributary to the Feather River, which is tributary to the Sacramento River, which flows into the Sacramento-San Joaquin Delta.

15. The designated beneficial uses of the Sacramento River, as specified in the Basin Plan, are municipal and domestic supply, agricultural irrigation supply, stock watering, hydroelectric power generation, recreation, freshwater habitat, fish migration and spawning, wildlife habitats, groundwater recharge, fresh water replenishment, preservation of rare and endangered species, and aesthetic enjoyment.
16. The groundwater flows generally to the south-southwest beneath the site with groundwater elevations ranging between 50 to 63 feet above mean sea level.
17. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural supply, industrial process supply, and industrial process supply.
18. Title 27 CCR Section 20240(c) requires five feet of separation between wastes and the highest groundwater level. Water is first encountered about three feet below the waste under LF-3. Therefore, on 3 April 1989, the Discharger requested approval of an engineered alternative. The engineered alternative, which allows a three-foot separation between wastes and groundwater consisting of a HDPE liner was approved by the Regional Board in Order No. 89-097, adopted 26 May 1989.

GROUNDWATER DEGRADATION

19. Volatile Organic Compounds (VOCs) and elevated inorganic water quality parameters have been found in monitoring wells at the facility since monitoring began in 1987. The presence of VOCs which do not occur naturally in groundwater and the elevated inorganic water quality parameters indicate a release of waste to groundwater.
20. The Discharger conducted evaluation monitoring in response to the detection of VOCs and elevated concentrations of general water quality parameters in four of the landfill facility's groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-10) in 1993. On 31 August 1993, the Discharger proposed a *Corrective Action Plan* consisting of a proposal to implement source control by closing LF-2 with a soil cover consisting of a two foot foundation layer, a one foot barrier layer of 1×10^{-6} cm/sec compacted clay, and a one foot vegetative layer. The cover was installed to provide a reduction in the percolation of precipitation and reduce the rate at which leachate is generated. Since LF-1 was closed prior to 1984, it did not receive a clay barrier layer. However, LF-1 is covered by asphalt, concrete, buildings, or aggregate and graded to drain runoff.
21. The Discharger submitted an *Amendment to the Report of Waste Discharge and Establishment of Evaluation Monitoring Program* on 5 April 2002 in response to the detection of one VOC above the practical quantitation limit and total and bicarbonate alkalinity above the concentration limit in well MW-8, adjacent to LF-3. The VOC, 1,1-dichloroethane, was detected at 1.1 micrograms per liter ($\mu\text{g/L}$). Total and bicarbonate alkalinity were detected at 300 milligrams per liter (mg/L), above the concentration limit of

190 mg/L. The presence of 1,1-dichloroethane and the levels of total and bicarbonate alkalinity were confirmed in later re-tests. As part of evaluation monitoring, three new groundwater monitoring wells (MW-11, MW-12, and MW-13) were installed and sampled for inorganic parameters and VOCs during the investigation. One piezometer (PZ-14) was also installed to aid in more accurately defining the groundwater flow gradient.

22. The 2 September 2002 *Engineering Feasibility Study* presented the results of the evaluation monitoring and included corrective action alternatives. The report concluded that the low-level VOC impacts to groundwater were limited to the area of well MW-8. The most likely source of impact was determined to be LFG migrating from LF-3. Some elevated inorganic results potentially indicative of LFG influence were also detected in groundwater samples from well MW-11. The primary corrective action recommended in the report targeted source control of LFG in LF-3 by constructing a passive, shallow horizontal interceptor trench, below the cover system and above the base liner system, along the northeast perimeter of LF-3.
23. The current Corrective Action Monitoring network consists of five monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-10) immediately down-gradient of LF-1 and LF-2 and one well (MW-8) down-gradient of LF-3. In addition, three new wells (MW-11, MW-12 and MW-13) and one piezometer (PZ-14), installed during the 2002 investigation will be added to the detection monitoring program. These WDRs include a revised Monitoring and Reporting Program that reflect the new wells and the changes to the detection and corrective action programs.

CEQA AND OTHER CONSIDERATIONS

24. This action to revise WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, CCR, Section 15301.
25. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulation (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste (MSW) regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste (MSWLF) is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which is 9 October 1993.
26. This Order implements
 - a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition;*

- b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
 - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
 - d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993.
27. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The monitoring and reporting program required by this Order and the attached "Monitoring and Reporting Program No. R5-2003-0093" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

28. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
29. The Regional Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
30. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
31. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws

and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED that Order No. 97-250 is rescinded and that Yuba Sutter Disposal, Incorporated, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted there under, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any waste at this site is prohibited.
2. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses or to groundwater is prohibited.
3. The discharge of waste to ponded water from any source is prohibited.
4. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
5. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution.

B. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. The Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

4. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
5. All wells within 500 feet of a waste management unit shall be sealed or abandoned to the satisfaction of the Yuba County Department of Environmental Health prior to the discharge of waste to the unit. A record of the sealing and/or abandonment of such wells shall be sent to the Regional Board and to the State Department of Water Resources.
6. Leachate generation by a landfill unit shall not exceed 85 percent of the design capacity of the sump pump in the LCRS. If leachate generation exceeds this value or if the depth of fluid in an LCRS exceeds the minimum needed for safe pump operation, then the Discharger shall notify the Regional Board in writing within seven days. Notification shall include a timetable for remedial or corrective action necessary to reduce leachate production.
7. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
8. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
9. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWG, NPDES No. CAS000001 or retain all storm water on-site.
10. Repair of existing closure construction must, at a minimum, comply with the existing approved construction plans.
11. Vegetation shall be planted and maintained over each closed landfill unit. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness.
12. Closed landfill units shall be maintained to promote runoff and to prevent ponding.

C. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 CCR for groundwater, surface water, and leachate, and in accordance with Monitoring and Reporting Program No. R5-2003-0093.
2. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
3. The Discharger shall comply with the Water Quality Protection Standard which is specified in Monitoring and Reporting Program No. R5-2003-0093 and the Standard Provisions and Reporting Requirements, dated August 1997.
4. The Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., USEPA methods 8260 and 8270). The presence of non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.
5. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2003-0093.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2003-0093 and Title 27 CCR Section 20415(e).
7. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.
8. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), and (3) *Methods for*

Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the

person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

15. **Unknown chromatographic** peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
16. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or down-gradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
17. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or down-gradient sample shall be reported and flagged for easy reference by Regional Board staff.
18. The Discharger shall use the following nonstatistical method for the VOC_{water} and VOC_{spg} (Soil Pore Gas) Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples that equal or exceed their respective MDL). Each qualifying constituent at a monitoring point shall be determined based on either:

- a. The data from a single sample for that constituent, taken during that reporting period from that monitoring point; or
- b. The data from the sample which contains the largest number of qualifying constituents, where several independent samples have been analyzed for that constituent at a given monitoring point.
- c. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer.

19. The method shall be implemented as follows:

- a. *For the Volatile Organic Compounds Monitoring Parameter For Water Samples [VOC_{water}]:* For any given monitoring point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all “qualifying VOCs” (in this case, VOCs that are detected in less than 10% of background samples).

The Discharger shall conduct verification testing (see Detection Monitoring Specification C.20 below, as appropriate) to determine whether a release of VOC_{water} Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or
- 2) The data contains one qualifying VOC that equals or exceeds its PQL.

- b. *For the Volatile Organic Compounds Monitoring Parameter For Soil Pore Gas Samples [VOC_{spg}]:* the VOC_{spg} Monitoring Parameter is a composite parameter for soil pore gas addressing all “qualifying VOCs” detectable using either GC or GC/MS analysis for at least a ten liter sample of soil pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC_{water} Monitoring Parameter. For the VOC_{spg} test, “qualifying VOCs” consist of all those VOCs which are detectable in less than 10% of background soil pore gas samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specification C.20 below, as appropriate) to determine whether a release of VOC_{spg} Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or
 - 2) The data contains one qualifying VOC that equals or exceeds its PQL.
- c. *For Constituents of Concern:* For five-yearly testing of all Constituents of Concern (COCs), the “qualifying constituents” consist of COCs that are detected in less than 10% of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications C.20 below, as appropriate) to determine whether a release of COCs has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying constituents that equal or exceed their respective MDLs; or
- 2) The data contains one qualifying constituent that equals or exceeds its PQL.

20. **Non-Statistical Method Retest.** A non-statistical test method may be used by the Discharger to analyze the monitoring data for which it is impractical to conduct a statistical analysis. A non-statistical test method shall include a procedure to verify that there is “measurably significant” evidence of a release from the Unit. For the VOC_{water}, VOC_{spg}, and nonstatistical COC test, the Discharger shall use a discrete retest consisting of two new samples from each indicating monitoring point. The Discharger shall conduct the retest for the standard non-statistical method as follows:

- a. **For VOC_{water} and VOC_{spg}.** Because the VOC composite Monitoring Parameter (for water or soil pore gas) is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, **the scope of the laboratory analysis for each of the two retest samples shall include all VOCs detectable in that retest sample.** Therefore, a confirming retest, in accordance with Detection Monitoring Specification C.19.a. and b., above, for either triggering condition in either of the two retest samples, shall have validated the original indication even if the detected constituents in the confirming retest sample(s) differs from those detected in the sample which initiated the retest.
- b. **For Constituents of Concern.** Because all Constituents of Concern that are jointly addressed in the non-statistical test above, remain as individual Constituents of Concern, **the scope of the laboratory analysis for the non-statistical retest of Constituents of Concern shall address only those constituents detected in the sample which initiated the retest.** Therefore, the list of “qualifying constituents” for use in the retest, under Detection Monitoring

Specification C.19.c., shall consist of those constituents which provided the original indication at that monitoring point. If the retest meets either triggering condition in either of the two retest samples, the retest shall have validated the original indication.

21. **Response to Detection in Background of VOCs** (or any other constituent which is not naturally in the background and thus is not amenable to statistical analysis):

a. Any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs, shows either:

- 1) Two or more VOCs at or above their respective MDL; or
- 2) One VOC at or above its respective PQL.

Then the Discharger shall:

- a) **Immediately** notify the Board by phone;
 - b) Follow up with written notification by certified mail **within seven days**;
 - c) Obtain **two** new independent VOC samples from that background monitoring point; and
 - d) Send such samples for laboratory analysis of all detectable VOCs **within thirty days**.
- b. If either or both the new samples validates the presence of VOC(s), using the above criteria, the Discharger shall:
- 1) **Immediately** notify the Board about the VOC(s) verified to be present at that background monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - 2) If the Discharger believes that the VOC(s) in background is from a source other than the Unit, then:
 - a) **Within seven days** of determining “measurably significant” evidence of a release, submit to the Board by certified mail a Notification of Intent to make such a demonstration pursuant to Title 27 CCR Section 20420(k)(7); and
 - b) **Within 90 days** of determining “measurably significant” evidence of a release, submit a report to the Board that demonstrates that a source other than the Unit caused the evidence, or that the evidence

resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone.

- c. If the Executive Officer determines, after reviewing the submitted report(s), that the VOC(s) detected originated from a source other than the Unit(s), the Executive Officer will make appropriate changes to the monitoring program.
22. If the Executive Officer determines, after reviewing the submitted report, that the detected VOC(s) most likely originated from the Unit(s), the Discharger shall **immediately** implement the requirements of *Response To A Release*, contained in the Standard Provisions and Reporting Requirements (August 1997).

D. REPORTING REQUIREMENTS

1. The Discharger shall comply with the reporting requirements specified in this Order, in Monitoring and Reporting Program Order No. R5-2003-0093 and in the Standard Provisions and Reporting Requirements dated August 1997.
2. Annually, prior to the anticipated rainy season, but no later than **15 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system and groundwater monitoring equipment (including wells, etc.). By **1 October of each year**, the Discharger shall submit to the Regional Board the Inspection Report describing measures planned to prepare the site for the wet season. Any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes by **15 November**.
3. The Discharger shall submit a report on the effectiveness of the corrective action program in accordance with Title 27 CCR Section 20430(h) to the Regional Board semi-annually. This report may be included in the Semi-Annual Monitoring Report submitted under Monitoring and Reporting Program No. R5-2003-0093.
4. The Discharger shall submit a status report regarding the financial assurances for corrective action and post-closure maintenance annually after the date of adoption of these requirements that either validates the ongoing viability of the financial instrument or proposes and substantiates any needed changes.
5. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the

name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory requirements contained in Provision D.7 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.

E. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 CCR and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0093, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring groundwater, leachate from the landfill units, and surface waters, throughout the active life of the waste management units and the post-closure maintenance period. A violation of Monitoring and Reporting Program No. R5-2003-0093 is a violation of these waste discharge requirements.
4. The Discharger shall comply with the applicable portions of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Discharges Regulated by Title 27 and/or Part 258 (27 CCR §20005 et seq. and 40 CFR 258 et seq.)*, dated August 1997, which are hereby incorporated into this Order.
5. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
6. The post-closure maintenance period shall continue until the Regional Board determines that remaining wastes in the landfill will not threaten water quality.
7. The Regional Board will review this Order periodically and may revise requirements when necessary.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2003-0093
YUBA SUTTER DISPOSAL, INCORPORATED
CLASS III LANDFILLS
YUBA COUNTY

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I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 June 2003.

THOMAS R. PINKOS, Executive Officer

Attachments

SJY/SER

Revised: 14 May 2003

INFORMATION SHEET

ORDER NO. R5-2003-0093

YUBA SUTTER DISPOSAL, INCORPORATED

YUBA SUTTER DISPOSAL, INCORPORATED CLASS III LANDFILLS

YUBA COUNTY

Yuba Sutter Disposal Inc. (YSDI) operated a 160-acre Class III landfill facility located on Highway 20 within the northeast city limits of Marysville. The facility accepted wastes from Marysville, Yuba City, Wheatland, Olivehurst, and unincorporated areas of Yuba and Sutter counties. These Waste Discharge Requirements (WDRs) provide the requirements for post-closure activities and corrective action.

The YSDI Landfill is comprised of three landfill areas: the South Area (LF-1), the Peach Orchard (LF-2), and the North Area (LF-3). LF-1 is an unlined unit that ceased accepting waste in 1984 and was closed in accordance with the regulations that existed at that time. Most of LF-1 is covered with building structures and paved parking, and is graded to drain toward an on-site storm water collection and removal system. LF-2 is a lined unit which received final cover in 1995 as a corrective action measure. LF-3 is a lined unit that ceased accepting waste in 1996 and was closed in accordance with an approved engineered alternative in October 1997.

Water is first encountered about 10 feet below the waste under LF-1 and LF-2 and about three feet below the waste under LF-3. However, a composite liner under LF-3 provides an engineered alternative to the required five-foot minimum separation between wastes and water, which was approved by the Board in WDRs Order No. 89-091. The beneficial uses of ground water are domestic, municipal, irrigation, stock watering, and process supply.

Groundwater monitoring, which began in 1987, indicated a release from areas LF-1 and LF-2 as revealed by sporadic detections of volatile organic compounds (VOCs) in site monitoring wells, specifically, vinyl chloride, acetone, carbon disulfide, cis-1,2-dichloroethene, benzene, chlorobenzene, xylenes, 1,4-dichlorobenzene, and elevated total dissolved solids (TDS), pH, electrical conductivity, aluminum, antimony, arsenic, chromium, iron, manganese, vanadium and zinc. In August 1993, YSDI submitted an *Amendment to Report of Waste Discharge*, which assessed the nature and extent of the release as well as presented an engineering feasibility study and a corrective action plan. The corrective action plan proposed to implement source control by closing and capping LF-2. The final cover was to reduce the percolation of precipitation, thereby reducing the rate at which leachate is generated.

On 5 May 1997, YSDI submitted a *Report of Waste Discharge* requesting approval of an engineered alternative for the closure of LF-3. The engineered alternative cap consisted of a substitution of a geosynthetic clay liner for the prescriptive clay barrier layer and a reduction in the foundation layer's thickness from the required 24 inches to 18 inches. WDRs Order No. 97-250 was adopted on 5 December 1997 to reflect the changes in the monitoring program and to include the engineered alternative.

In April 2002, YSDI submitted an *Amendment to Report of Waste Discharge and Establishment of Evaluation Monitoring Program for LF-3 North Area* (EMP) to the Board to investigate evidence of a release identified in detection monitoring well MW-8, adjacent to the North Area, due to the detection of 1,1-dichloroethane and elevated total alkalinity and bicarbonate alkalinity. The EMP was approved by the Board with minor revisions, and activities begun in July 2002. As part of the EMP, three groundwater monitoring wells (MW-11, MW-12 and MW-13) were installed in LF-3 and placed in the detection monitoring program. The wells were sampled for inorganic parameters and VOCs during the investigation.

An *Engineering Feasibility Study* (EFS) that presented results of the EMP and evaluated corrective action alternatives was submitted to the Board in September 2002. In summary, the EFS concluded that the low-level VOC impacts to groundwater were limited to the area of well MW-8. The most likely source of impact was determined to be landfill gas (LFG) migrating from LF-3. Some elevated inorganic results potentially indicative of LFG influence were also detected in groundwater samples from well MW-11. The primary corrective action recommended in the EFS targeted source control of LFG. The proposed corrective action was to enhance the LFG removal in the northeast corner of LF-3 by constructing a passive, shallow horizontal interceptor trench, below the cover system and above the base liner system, along the northeast perimeter of LF-3. The intent if the interceptor trench is to capture the LFG before it can migrate out of the soil between the cover and base liner.

An *Evaluation of the Groundwater Monitoring Network and Corrective Action Effectiveness* dated 27 February 1998 was submitted to Board in accordance with Provisions D.7.A. and B. of WDRs Order No. 97-250. In the report, YSDI proposed to use intrawell comparisons for detection monitoring wells MW-4, MW-8, and MW-9; to add VOCs to the parameter list for semi-annual detection monitoring; reduce leachate sampling to annual; and placing detection well MW-4 under corrective action monitoring. Based on recent events, the following were included in this revised Monitoring and Reporting Program Order No. R5-2003-0093: VOCs were added to the parameter list for semi-annual detection monitoring and MW-4 was placed in the corrective action monitoring program.

Surface drainage is generally to the southeast into the Yuba River. The beneficial uses of surface waters are agriculture, industry, aesthetic enjoyment, and preservation and enhancement of fish, wildlife and other aquatic resources.